ANALYTICAL REPORT

JOB NUMBER: 912680

Prepared For:

EQM
1310 Kemper Meadow Drive
Cincinnati, Oh 45240

Attention: Mr. Mark Jarski

Date: 11/11/99

Signature

Name: Thomas F. Mroz

Title: Project Manager

11/11/99
Date

Severn Trent Laboratories
2400 Cumberland Drive
Valparaiso, IN 46383

PHONE: 219-464-2389
FAX..: 219-462-2953

STL
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SAMPLE INFORMATION
Date: 11/11/99

Job Number.: 912680
Customer...: EQM
Attn.....: Mr. Mark Jarski

Project Number.....: 96000813
Customer Project ID....: INDUSTRIAL HIGHWAY
Project Description....:

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
912680-1	S17	Solid	11/05/1999	08:40	11/05/1999	12:39
912680-2	S18	Solid	11/05/1999	09:45	11/05/1999	12:39

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LABORATORY TEST RESULTS

Job Number: 912680

Date: 11/11/99

CUSTOMER: EQM PROJECT: INDUSTRIAL HIGHWAY ATTN: Mr. Mark Jarski

Customer Sample ID: S17
Date Sampled.....: 11/05/1999
Time Sampled.....: 08:40
Sample Matrix.....: Solid

Laboratory Sample ID: 912680-1
Date Received.....: 11/05/1999
Time Received.....: 12:39

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
3550B	Sonication extraction for DRO Ultrasonic Extraction, Solid	Complete			11/06/99	wds
EPA 8015B	Diesel Range Organics (DRO) Diesel Range Organics, Solid	3400	600	mg/Kg	11/07/99	wds
EPA 8015B	Gasoline Range Organics (GRO) Gasoline Range Organics, Solid	1.3	0.05	mg/Kg	11/08/99	*sub

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LABORATORY TEST RESULTS

Job Number: 912680

Date: 11/11/99

CUSTOMER: EQM PROJECT: INDUSTRIAL HIGHWAY ATTN: Mr. Mark Jarski

Customer Sample ID: S18
Date Sampled.....: 11/05/1999
Time Sampled.....: 09:45
Sample Matrix.....: Solid

Laboratory Sample ID: 912680-2
Date Received.....: 11/05/1999
Time Received.....: 12:39

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
3550B	Sonication extraction for DRO Ultrasonic Extraction, Solid	Complete			11/06/99	wds
EPA 8015B	Diesel Range Organics (DRO) Diesel Range Organics, Solid	<20.0	20.0	mg/Kg	11/07/99	wds
EPA 8015B	Gasoline Range Organics (GRO) Gasoline Range Organics, Solid	ND	0.05	mg/Kg	11/08/99	*sub

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QUALITY CONTROL RESULTS

Job Number.: 912680 — Report Date.: 11/11/99

CUSTOMER: EQM — PROJECT: — ATTN: Mr. Mark Jarski

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: EPA 8015B — Batch.....: 49036 — Analyst...: wds
Method Description.: Diesel Range Organics (DRO) — Units.....: mg/L

MB	Method Blank				11/06/1999	2301

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Diesel Range Organics	ND						

LCS	Laboratory Control Sample	DROSTD			11/06/1999	2343

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Diesel Range Organics	564.69		500		112.9	%	55-131

MS	Matrix Spike	DROSTD	912590-1		11/07/1999	0108

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Diesel Range Organics	1037.0		500	232.31	160.9	%	55-131

MSD	Matrix Spike Duplicate	DROSTD	912590-1		11/07/1999	0151

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Diesel Range Organics	1161.7	1037.0	500	232.31	185.9	%	55-131
					11.3	R	20

Test Method.....: EPA 8015B — Batch.....: 49234 — Analyst...: *sub
Method Description.: Gasoline Range Organics (GRO) — Units.....: mg/L

MB	Method Blank				11/08/1999	1759

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Gasoline Range Organics	0.0133						

LCS	Laboratory Control Sample	GROSTD			11/08/1999	1837

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Gasoline Range Organics	436.9		500.000000		87.4	%	70-130

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

Job Number.: 912680

QUALITY CONTROL RESULTS

Report Date.: 11/11/99

CUSTOMER: EQM PROJECT: ATTN: Mr. Mark Jarski

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	GROSTD	912716-10		11/09/1999	2130

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Gasoline Range Organics	517.1		500.000000	163.4	70.7	%	55-123

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	GROSTD	912716-10		11/09/1999	2206

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Gasoline Range Organics	464	517.1	500.000000	163.4	60.1	%	55-123
					10.8	R	20

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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QUALITY ASSURANCE FOOTER

METHOD REFERENCES

1. EPA SW-846, Test Methods for Evaluating Solid Waste Update I, IIA, IIB, III
2. Standard Methods for the Examination of Water and Wastewater, 18th Edition
3. EPA 600/4-79-020, Methods of Chemical Analysis for Waters and Wastes, March 1983
4. Federal Register, Friday, October 26, 1984 (40 CFR Part 136)
5. American Society for Testing and Materials, Volumes 5.01, 5.02, 5.03, 11.01,11.02,11.03,11.04
6. EPA Methods for Environmental Samples

COMMENTS

All methods of chemical analysis have a statistical uncertainty associated with the results. Unless otherwise indicated, the data in this report are within the limits of uncertainty as specified in the referenced method. Quality Control acceptance criteria are based either on actual laboratory performance or on limits specified in the referenced method. The date and time of analysis indicated on the QA report may not reflect the actual time of analysis for QC samples. All data are reported on an "as received" basis unless otherwise indicated. Data reported in the QA report may be lower than sample data due to dilution of samples into the calibration range of the analysis. Sample concentration for solid samples are calculated on an as received (wet) basis. Unless otherwise indicated, volatiles by gas chromatography (GC) are reported from a single column. Volatile analysis by GC on low level soil extractions are conducted at room temperature.

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA	=	Not Analyzed	ND	=	Not detected at a value greater than the reporting limit
N/A	=	Not applicable	NC	=	Not calculable due to values lower than the reporting limit
ug/L	=	Micrograms per liter	mg/L	=	Milligrams per liter
ug/Kg	=	Micrograms per kilogram	mg/kg	=	Milligrams per kilogram
U	=	Undetected			
J	=	Indicates value is > MDL, but < Reporting Limit			
B	=	Analyte was detected in the method blank analyzed with this sample.			
D	=	Surrogate recoveries are not calculated due to sample dilution.			
X	=	Surrogate recovery is outside quality control limits.			
Y	=	Spike or spike duplicate recovery is outside quality control limits.			
Z	=	Relative percent difference for a spike and spike duplicate is outside quality control limits. The precision of the method was impacted by matrix.			
^	=	Indicates value is above QC acceptance criteria.			

QC SAMPLE IDENTIFICATIONS

MB	=	Method Blank	SB	=	Storage Blank
RB	=	Reagent Blank	EB	=	Extraction Blank
PB	=	Preparation Blank	CALB	=	Calibration Blank
MD	=	Method Duplicate	RS	=	Reference Standard
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	ICB	=	Initial Calibration Blank
PDS	=	Post Digestion Spike	SS	=	Surrogate Spike
ISA	=	Interference Check standard "A"	ISB	=	Interference Check Standard "B"
ISCAB	=	Interference Check Sample AB	MSA	=	Method of Standard Additions
CAL	=	Calibration standard	SD	=	Serial Dilution
MST	=	TCLP Matrix Spike	MSQ	=	TCLP Matrix Spike Duplicate
PST	=	TCLP Post Digestion Spike	LCT	=	TCLP Laboratory Control Sample

rpjsckl | Job Sample Receipt Checklist Report 11/05/99 | V2

Job Number.....: 912680 Location.: 57211 Customer Job ID.....: Job Check List Date.: 11/05/99
Project Number.: 96000813 Project Description.: Project Manager.....: tfm
Customer.....: EQM Contact.: Ms. Sharon Laycock

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?	Y	
Custody seal on shipping container?		
...If "yes", custody seal intact?		
Custody seals on sample containers?		
...If "yes", custody seal intact?		
Samples chilled?	Y	
Temperature of cooler acceptable? (4 deg C +/- 2).		RECEIVED ON ICE
Samples received intact (good condition)?	Y	
Volatile samples acceptable? (no headspace)		N/A
Correct containers used?	Y	
Adequate sample volume provided?	Y	
Samples preserved correctly?	Y	
Samples received within holding-time?	Y	
Agreement between COC and sample labels?	Y	
Additional		
Comments		
Sample Custodian Signature		

Environmental Quality Management, Inc.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Reference Document No. A- 3421 D

912680

Page 1 of 1

Project Name: INDUSTRIAL HIGHWAY
Project Number: 3141-25
Project Manager: J. RHINEFIELD
Sample Team Leader: T. MURPHY

Lab Destination: SEVERA-TRENT LABS
Lab Contact/Phone: TOM MROZ (800) 688-0532
Lab Purchase Order No.: #9014
Carrier/Waybill No.:

Report to: MARK JARSKI (EQM)
513-825-9728 FAX#
"MAIL FINAL REPORT TO:"

Bill to: EQM
1310 KEMPER MEADOW DRIVE
CINCINNATI, OH 45240

ONE CONTAINER PER LINE

Sample Number	Sample Description/Type	Date/Time Collected	Container Type	Sample Volume	Pre-servative	Requested Analytical Method/(Parameters)	Condition on Receipt (Lab)
S17	Cell #6 Composite	11/5/99 @ 0840	Glass	8 oz	Ice	TPH	
S18	Cell #5 Cleanup Confirmation	11/5/99 @ 0945	Glass	8 oz	Ice	TPH	

Special Instructions: Please hold these samples in storage for possible later analyses.

Possible Hazard Identification:
Non-hazard ☒ Flammable ☐ Skin Irritant ☐ Other _____

Sample Disposal:
Return to Client ☐ Disposal by Lab ☒ Archive _____ (mos.)

Turnaround Time Required:
Normal ☐ Rush ☒ Results Required by _____

QA Requirements: State of Indiana Level III

1. Relinquished by (Signature/Affiliation): Tom Murphy / E-E-START — Date: 11/5/99 Time: 1100
1. Received by (Signature/Affiliation): Fred Bartenmes — Date: 11/5/99 Time: 11:00
2. Relinquished by (Signature/Affiliation): Fred Bartenmes — Date: 11/5/99 Time: 11:02
2. Received by (Signature/Affiliation): Tom Bob — Date: 11/5/99 Time: 1145

Comments:

CHAIN OF CUSTODY RECORD

Severn Trent Laboratories
2400 Cumberland Drive Tel: (219) 464-2389
Valparaiso, IN 46383 Fax: (219) 462-2953

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2 of 2

CUSTOMER INFORMATION

COMPANY: STL-VALPARAISO
SEND REPORT TO: TOM MROZ
ADDRESS:
PHONE:
FAX:

PROJECT INFORMATION

PROJECT NAME/NUMBER:

BILLING INFORMATION

BILL TO:
ADDRESS:
PHONE:
FAX: PO NO.:

LAB JOB NO.

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS / METHOD REQUEST: GRO 8015M	REMARKS / PRECAUTIONS
	912647.1	11/4/99	1030	SOLID	80z	NONE	1	2-6760	Per Linda Mackley
	912680.1	11/5/99	0840				1		
	-2	11/5/99	0945				1		
	912705.1	11/5/99	1210				1		LEVEL III

SAMPLER:
SHIPMENT METHOD: STL FIELD
AIRBILL NO.:

REQUIRED TURNAROUND:* ☐ SAME DAY ☒ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☐ ROUTINE OTHER

1. RELINQUISHED BY: SIGNATURE: Jon Bob	DATE 11/8/99	2. RELINQUISHED BY: SIGNATURE:	DATE 11/9/99	3. RELINQUISHED BY: SIGNATURE:	DATE 11-8
PRINTED NAME/COMPANY: JB STL	TIME 1440	PRINTED NAME/COMPANY: T. MROZ STL-Valpo	TIME 16:08	PRINTED NAME/COMPANY:	TIME 1623
1. RECEIVED BY: SIGNATURE:	DATE 11/8/99	2. RECEIVED BY: SIGNATURE:	DATE	3. RECEIVED BY: SIGNATURE:	DATE
PRINTED NAME/COMPANY: T. MROZ STL	TIME 1445	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA
1250 E. Gene Autry Way
Anaheim, CA 92805
(714) 937-1094 Fax (714) 937-1170

☐ Houston, TX (Env)

☐ Aurora, CO
10703 E. Bethany Drive
Aurora, CO 80014
(303) 751-1780 Fax (303) 751-1784

☐ Houston, TX (Pet)
8210 Mosley Road
Houston, TX 77075

☐ Casper, WY
420 W. First Street
Casper, WY 82601
(307) 235-5741 Fax (307) 266-1676

☐ Lake Charles, LA
3545 Beglis Parkway
Sulphur, LA 70663
(318) 583-4928 Fax (318) 583-4929

☐ Corpus Christi, TX
1733 N. Padre Island Drive
Corpus Christi, TX 78408
(361) 289-2673 Fax (361) 289-2471

☒ Valparaiso, IN
2400 Cumberland Drive
Valparaiso, IN 46383
(219) 464-2389 Fax (219) 462-2953

DRO GC/MS

(SEVERN TRENT-Valparaiso)

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\NOV0399\S6500.D
Acq On : 3 Nov 1999 6:37 pm
Sample : DRO STD 500
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 19:38 1999

Vial: 1
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Quant Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Wed Oct 27 13:48:47 1999
Response via : Initial Calibration
DataAcq Meth : DROMS

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
Target Compounds					Qvalue
1) DRO	15.27	57	72175594m	827.39 mg/L	
2) Jet Fuel (type A)	0.00	57	0	N.D. d	
3) Motor Oil	0.00	57	0	N.D.	

(#) = qualifier out of range (m) = manual integration

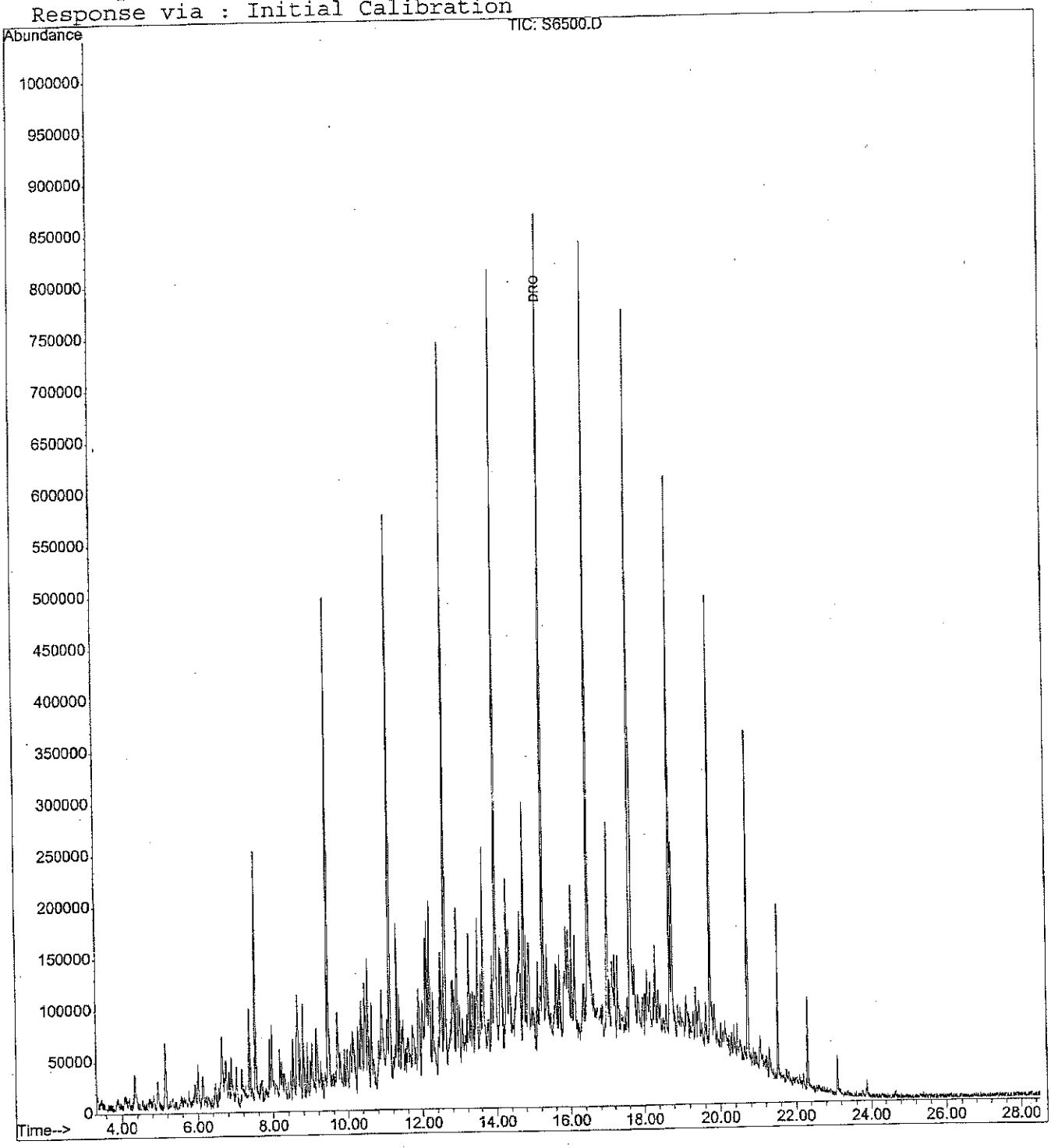
Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV0399\S6500.D
Acq On : 3 Nov 1999 6:37 pm
Sample : DRO STD 500
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 19:38 1999

Vial: 1
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Thu Nov 04 09:04:31 1999
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\NOV0399\S6501.D
Acq On : 3 Nov 1999 7:12 pm
Sample : DRO STD 50
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 19:55 1999

Vial: 2
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Quant Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Wed Oct 27 13:48:47 1999
Response via : Initial Calibration
DataAcq Meth : DROMS

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
Target Compounds						Qvalue
1) DRO	15.27	57	7812270m	73.59	mg/L	
2) Jet Fuel (type A)	0.00	57	0	N.D.	d	
3) Motor Oil	0.00	57	0	N.D.		

(#) = qualifier out of range (m) = manual integration

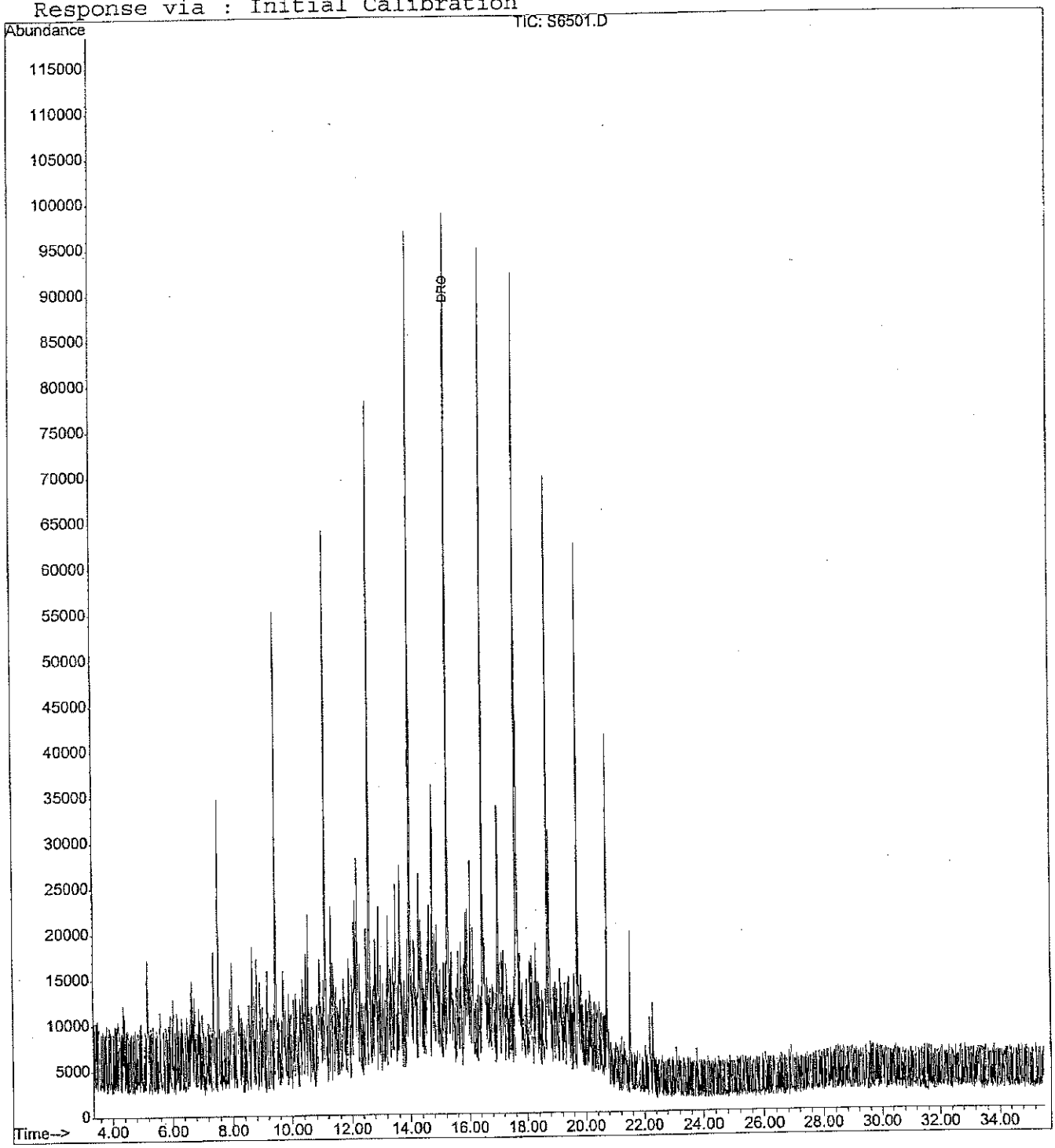
Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV0399\S6501.D
Acq On : 3 Nov 1999 7:12 pm
Sample : DRO STD 50
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 19:55 1999

Vial: 2
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Thu Nov 04 09:04:31 1999
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\NOV0399\S6502.D
Acq On : 3 Nov 1999 7:54 pm
Sample : DRO STD 100
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 21:26 1999

Vial: 3
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Quant Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Wed Oct 27 13:48:47 1999
Response via : Initial Calibration
DataAcq Meth : DROMS

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
Target Compounds					Qvalue
1) DRO	15.27	57	13978124m	144.37 mg/L	
2) Jet Fuel (type A)	0.00	57	0	N.D. d	
3) Motor Oil	0.00	57	0	N.D.	

(#) = qualifier out of range (m) = manual integration

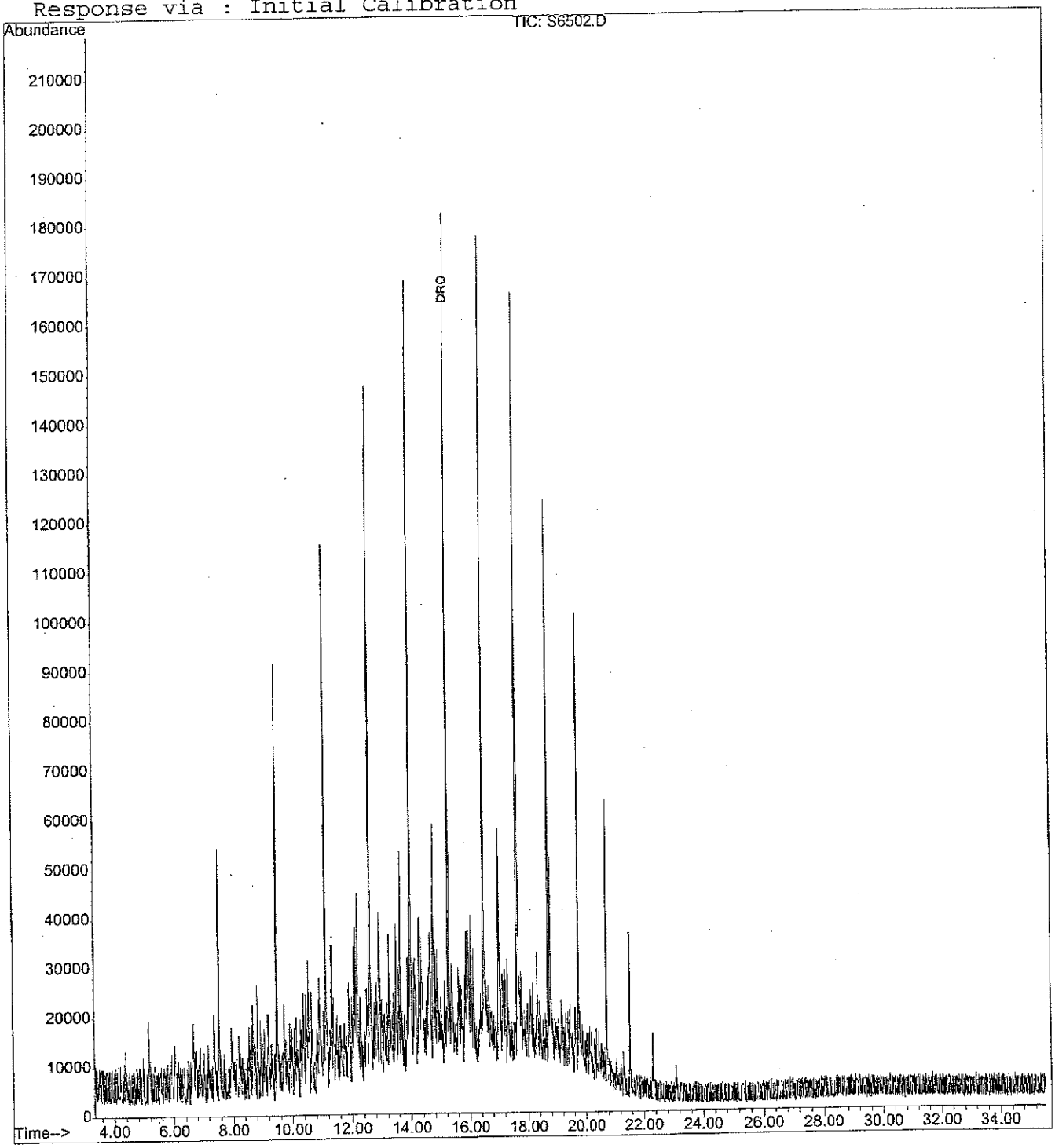
Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV0399\S6502.D
Acq On : 3 Nov 1999 7:54 pm
Sample : DRO STD 100
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 21:26 1999

Vial: 3
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Thu Nov 04 09:04:31 1999
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\NOV0399\S6503.D
Acq On : 3 Nov 1999 8:36 pm
Sample : DRO STD 200
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 21:26 1999

Vial: 4
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Quant Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Wed Oct 27 13:48:47 1999
Response via : Initial Calibration
DataAcq Meth : DROMS

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
Target Compounds						Qvalue
1) DRO	15.27	57	27408387m	299.56	mg/L	
2) Jet Fuel (type A)	0.00	57	0	N.D.	d	
3) Motor Oil	0.00	57	0	N.D.		

(#) = qualifier out of range (m) = manual integration

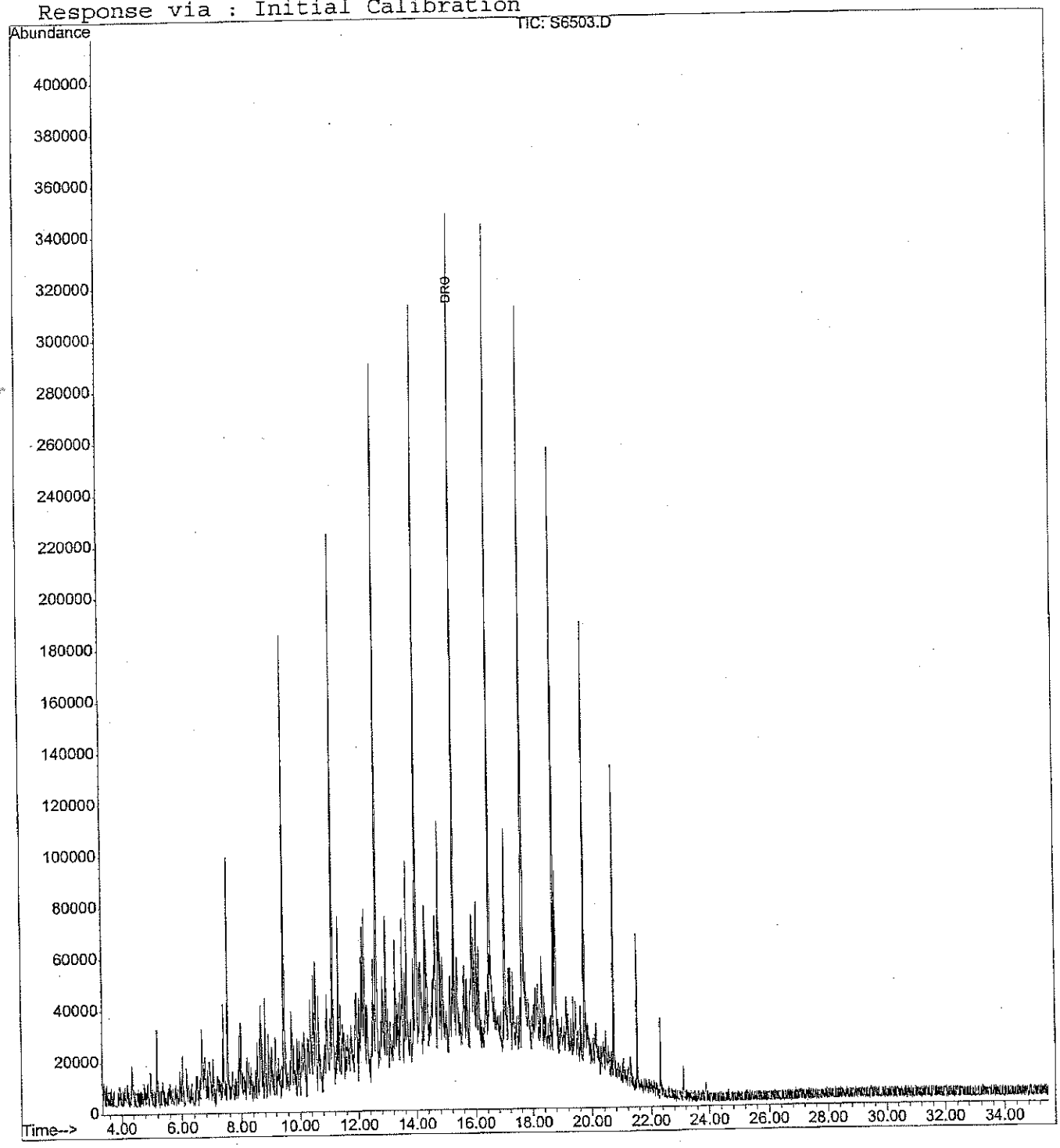
Quantitation Report

Data File : C:\HPCHEM\1\DATA\NOV0399\S6503.D
Acq On : 3 Nov 1999 8:36 pm
Sample : DRO STD 200
Misc :
MS Integration Params: events.e
Quant Time: Nov 3 21:26 1999

Vial: 4
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: DROMS.RES

Method : C:\HPCHEM\1\METHODS\DROMS.M (Chemstation Integrator)
Title :
Last Update : Thu Nov 04 09:04:31 1999
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\NOV0399\S6504.D
Acq On : 3 Nov 1999 9:18 pm
Sample : DRO STD 1000
Misc :
MS Integration Params: events.e

Vial: 5
Operator: wds/jdb
Inst : GC/MS Ins
Multiplr: 1.00

ENVIRONMENTAL QUALITY MANAGEMENT, INC.
1800 Carillon Boulevard
Cincinnati, Ohio 45240
(513) 825-7500
fax (513) 825-7495
www.eqm.com

December 30, 2003

Mr. Steve Faryan, FOSC
U.S. EPA Region V
77 W. Jackson Boulevard
Chicago, IL 60604

Re: EPA Contract No. 68-S5-9801
Task Order No. 9801-05-025
Industrial Highway Site/Gary, IN
Contractor's Final Site Report

Dear Mr. Faryan:

Enclosed please find one (1) copy of the Contractor's Final Site Report for Task Order No. 9801-05-025. A second copy has been forwarded to Gail Nabasny, the Project Officer. This report has been compiled and is submitted in accordance with Section F.2.B.3 of the above referenced contract.

If you have any questions or require additional information, please contact me at 800/500-0575.

Sincerely,

ENVIRONMENTAL QUALITY MANAGEMENT, INC.

Jack S. Greber

Jack S. Greber
Program Manager

JSG/msc

cc: G. Nabasny
L. Smith

CONTRACTOR'S FINAL SITE REPORT
INDUSTRIAL HIGHWAY SITE

Prepared for:

U.S. Environmental Protection Agency
Region V Emergency Response Division
77 W. Jackson Boulevard
Chicago, IL 60604

EPA Contract No. 68-S5-9801
Task Order No. 9801-05-025

Prepared by:

Environmental Quality Management, Inc.
1800 Carillon Boulevard
Cincinnati, OH 45240

December 30, 2003

TABLE OF CONTENTS

TABLES

1.0 INTRODUCTION AND OVERVIEW

This Contractor's Final Site Report was prepared by Environmental Quality Management, Inc. (EQ) in accordance with Section F.2.B.3 of EQ's Emergency and Rapid Response Services (ERRS) contract (EPA Contract No. 68-S5-9801) with the U.S. Environmental Protection Agency (U.S. EPA). The report applies to:

U.S. EPA Task Order No.:	9801-05-025
U.S. EPA Site No.:	Z590
Site Name & Location:	Industrial Highway Site Gary, IN

This report details all task order costs, resources used (including ERRS labor, equipment, materials, subcontractors), and other items or services delivered. It also describes the ERRS response approaches used, any problems encountered and solutions used.

Section 2.0 provides a brief description of the Industrial Highway site and details the ERRS response approach, problems encountered, and solutions used to remedy the problems encountered. Section 3.0 presents a summary of all ERRS resources used, other related items or services delivered, and costs.

2.0 DESCRIPTION OF SITE AND ERRS RESPONSE APPROACH

EQ received a written task order from the U.S. EPA on April 6, 1999. The statement of work specified that EQ, at the discretion of the Federal On-Scene Coordinator (FOSC), Mr. Steve Faryan, was:

1) The Contractor shall contain and control excess oil contamination in water filled ditch that emptied into the Grand Calumet River adjacent to the Gary Municipal Airport.

The Industrial Highway site was located at the Gary Regional Airport, and consisted of approximately 1000' of drainage ditch contaminated with oil/tar at the west end of the airports east-west runway. The ditch was part of the west end of the airports runoff system that fed into the Calumet River. The runway runoff was controlled by approximately 8,000' of ditch.

EQ and EPA conducted a site walk on April 7 to assess site work. The ERRS crew mobilized to the site on April 9, and initiated removal of the oil located in an 800 foot section of the drainage ditch. The technicians used sausage boom and absorbent pads to remove the oil from the water. When the pads were saturated, they were removed with long poles and bagged into 55-gallon drums for disposal. When the oil was removed, sausage boom and an 18" sea curtain were deployed in 23 key areas of the ditch. Site demobilization occurred on April 10.

On May 5, the Response Manager and 1 Cleanup Technician mobilized back to the site to troubleshoot the existing water treatment system. Utilities were reconnected to the system, and EQ procured onsite security. An electrician conducted a series of test checks, and it was determined that the system was non-operational. The pumps were pulled from the wells and, due to extensive

corrosion and pump condition, sent offsite for repair. Two rolloff boxes of oil contaminated boom were sent to Forest Lawn Landfill on May 13 for disposal.

On May 28, the Response Manager and 2 Cleanup Technicians mobilized back to the site to replace oil-soaked boom. The boom was bagged and loaded into a 20 cubic yard rolloff box for disposal. New sausage boom was deployed throughout the ditch area. On June 9, EQ remobilized to test the pumps and check to see if they were still operational or needed to be replaced. An electrician also mobilized to test check the system, and it was determined that the power source was operational. The pumps were then removed and sent for retrofitting and repair. A determination was made to increase the size of the existing system with additional interceptor trenches and recovery wells. Additional system maintenance was performed, including opening and cleaning the oil/water separator, and purging of the existing inlet lines to the system. An earthen weir was also installed south of Recovery Well RC-2.

On July 1, the Response Manager and 2 Cleanup Technicians remobilized to the site to replace saturated boom, which was removed for disposal and placed in a 20 cubic yard box. New boom was deployed throughout the ditch. On July 7, an additional interceptor trench and recovery wells were connected to the system. Test trenches were dug on the east side of the access road to determine where the oil was infiltrating into the ditch. An additional 100' of interceptor trench was installed south of Recovery Well #2. One cubic yard rolloff box containing oil-soaked boom was transported for offsite disposal.

On September 16, the Response Manager and a water treatment Response Manager remobilized to the site to continue troubleshooting the system. New well pumps were installed, and the effluent pump was sent offsite for motor replacement. A tanker was also mobilized to pump 1300 gallons of oil

and scale from the components for disposal. All scale and sludge was removed from the units prior to steam cleaning. On September 22, two Cleanup Technicians mobilized to the site to steam clean the system components, including the oil/water separator. On September 23, oil soaked boom was replaced with new boom. The existing 2 well panel was refurbished to run the well pumps with new memory sensors. The effluent pump was rebuilt by installing a new motor. 1100 gallons of oil/water were treated and discharged.

On September 27, the ERRS crew remobilized to the site and began setting up the support zone. 100' of bank along the ditch was graded and stabilized (using 6" riprap) for office trailer placement. The staging area was constructed using 3/4" stone. Two office trailers were mobilized for use as a command post and break trailer. An additional water treatment Response Manager mobilized to the site on September 29 to troubleshoot the water treatment system. Two additional recovery wells were installed on October 7. RW-4 required trenching through the airport access road and the installation of approximately 350' of effluent pipe back to the treatment building. RW-3 was installed along the railroad side of the ditch (both wells pumped oil/water to the system along with RW 1 and 2). An additional sock filter was installed in the treatment system, and the temporary wiring of the new wells was completed. All four wells were operational by October 18. The trenches were backfilled, and unnecessary equipment was demobilized from the site. The procurement of bids for the new water treatment panel was awarded by October 24. A total of 264,000 gallons of water was recovered and treated to date.

On November 1, ditch excavation was initiated by building berms in the ditch every 30-40', then using 3-4" pumps to dewater the sections requiring excavation. 315 tons of lime kiln dust and sludge was mixed in the cells to stabilize and move the soil to a staging area. Approximately 1100' of ditch was

excavated by November 16 (3,160 cubic yards of soil). The water treatment system operated continuously, treating 770,100 gallons of water (2 feet of oil was recovered in the process). 552 tons of soil was transported to Forest Lawn Landfill.

On November 30, three culvert pipes in the ditch area were cleaned using a 4000-psi water laser. All sludge was contained and removed for stabilization and disposal. Approximately 30,000 gallons of water in the ditch was treated for a high pH after stabilization. A bench scale study was performed to determine the amount of acid needed to treat the water in the ditch. Upon completion, the water was allowed to run freely through the ditch to the Calumet River. Monitoring of the product recovery system was ongoing; a total of 1,322,200 gallons of water was pumped and discharged. An additional 1400 gallons of oil was recovered. Erosion control of the west side of the ditch was completed, the ditch area was graded and seeded, and approximately 20,000 square feet of erosion control fabric was placed. Offsite T&D began on November 19 and continued through December 6. 2,828.2 tons of soil was transported to Forest Lawn Landfill during this period. All equipment was decontaminated, and the crew demobilized on December 14 for the holiday break.

The water treatment Response Manager mobilized back to the site on January 4, 2000. He began disengaging the existing well recovery panel and doing some preliminary wiring for the system. Product Level Control (PLC) mobilized to the site on January 5 with the new well monitoring panel. The new panel, designed to run four recovery wells, was constructed with the capability of upgrades to the system (air stripper) and new high and low well sensors for better alarms for the system. New well sensors were installed in the wells with the existing pumps, and were regulated and adjusted for the optimal depth. The system was run and tested throughout the week. The new panel came with a

remote and local hookup for monitoring of the system through a phone line and hookup to a personal computer. Specific software was designed for monitoring and troubleshooting of the system, and was installed on the RM's computer prior to PLC demobilization on January 8. Concrete well vaults were installed on Recovery Wells 3 and 4 along with fiberglass manholes; the areas surrounding the vaults were backfilled, graded, and seeded. An alarm system was procured and installed by January 14, allowing the system to be monitored for fire, smoke, or intrusion. Daily monitoring of the recovery system remained ongoing, and 1,547,000 gallons were pumped through this reporting period.

The Response Manager remobilized to the site on January 24 to perform quarterly maintenance on the oil-water separator, and to work with a site subcontractor hired to line the tank. A 5,000-gallon vacuum tanker was used to pump the 2,000-gallon storage tank and the separator (approximately 3,000 gallons of waste oil, water, and sludge). The inside of the separator was steam cleaned. Chicago Tank Lining sandblasted the inside of the separator, removing all spent shot for disposal. A visual inspection of the tank was conducted, and it was determined that no additional welding was required. The tank was then spray coated with a 50-mil epoxy liner, let cure for a 10-hour period, and the temperature in the building was increased to 100 degrees to accelerate curing. The tank was inspected and tested on January 27, and put back on line. Utilities to the command post were disconnected on February 14, and the site demobilized on February 16. 3,000 gallons of waste was transported for disposal at Beaver Oil.

Through March 26, 2000, a total of 2,401,000-gallons of water was pumped and discharged. On March 24, the RM and National Industrial Maintenance mobilized to the site to clean out the separator effluent tank. A 4,000-psi high pressure water blaster was used to remove sludge that was

blocking the effluent water from being discharged offsite through the bypass tank and also in the displacement box. The sludge was then vacuumed out using a high pressure vacuum tanker and staged for offsite disposal. 3,000-gallons of waste was transported and disposed at Beaver Oil.

On May 4, the RM and Cleanup Technician mobilized to the site to perform quarterly system maintenance. North Branch Environmental mobilized a 5,000-gallon vacuum tanker, and approximately 3,000-gallons of oil was pumped from the storage tank and oil-water separator. The inside of the separator was pressure washed, all the incline plates were washed, and all sludge and decon water was pumped into the tanker (along with oil) for disposal. The 50-micron filter bags were changed and the system was put back on line. A small ditch south of Recovery Well #3 had standing oil in it. Approximately 100-gallons of oil was pumped from that ditch for disposal. Boom was deployed at two areas along the main ditch, where oil resurfaced at the main ditch excavation (across the street from Recovery Well #1 and directly behind the airport runway). Bids for additional treatment equipment, and an addition to the recovery system building, were solicited. Through May 21, approximately 3,129,000-gallons of groundwater was pumped through the system and discharged. Approximately 364,000-gallons of oil/groundwater was also pumped.

Between June 5 and 13, ERT/REAC mobilized to the site to install a series of piezometers on the Conservation Chemical and Industrial Highway sites to determine the extent of oil plume. A Geoprobe unit was mobilized and a total of 16 piezometers were installed, 10 on the eastern edge of Conservation Chemical and 6 on Industrial Highway (along the ditch and road). An oil/water interface probe was used to monitor the extent and depth of oil in existing monitoring wells and in the newly installed piezometers. A final report will be generated from the study, along with accompanying recommendations for

upgrades to the existing recovery system. Approximately 9,000-gallons of oil was recovered for disposal. Through June 25, approximately 3,470,000-gallons of groundwater, and 341,000-gallons of oil/groundwater, were pumped through the system and discharged.

Changeout of oil-soaked boom occurred on July 8, 2000. On July 10, the "Site-Link" remote monitoring program showed Recovery Well #2 having a high alert, but the well pump was not running. The RM mobilized to the site to work on the pump high and low switches. After numerous attempts to troubleshoot the system through the panel and wiring, the pump was not able to go back on line. The RM and Cleanup Technician mobilized and, through the "Site-Link" system and the system panel, determined that the high switch on the well was malfunctioning. The switch was repaired, and the system was back on line by July 11. Through July 23, approximately 3,890,000-gallons of groundwater, and 420,000-gallons of oil/groundwater, were pumped through the system and discharged.

On July 24, the RM and Cleanup Technician remobilized to the airport to change out the spent sock filters in the system; they returned again on July 28 to change out the oil-soaked boom in the ditch. On August 17, "Site-Link" remote system monitoring showed RW-4 as being inoperative. The RM mobilized to the airport, checked the "Site-Link" system, and determined that the high-wet switch was not reading properly. The switch was cleaned and reinstalled, and the system was put back on-line. Through August 20, approximately 4,345,400-gallons of groundwater, and 455,400-gallons of oil/groundwater, were pumped through the system and discharged.

On August 24, 2000, the RM responded to a call from ABC Alarm that the recovery system was down. The "Site-Link" system showed that the high-low switches on the water effluent tank were not reading properly. The switches

were cleaned and reinstalled but were determined to be non-operational, and a new switch was ordered for the system. Oil soaked boom was also changed out. A meeting was held on August 29 (EPA, REAC/ERT, and EQ) to discuss options for system improvement. On August 31, EQ met with engineers from the EJ&E Railroad to begin the approval phase for Geoprobe work to be conducted along the rail line. Permits and additional insurance will be required. On September 7, the RM mobilized to the airport to install the new switches, and the software system was also modified. On September 15, the RM and a Cleanup Technician changed out oil soaked boom. Through September 24, approximately 4,531,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 250-gallons of oil was also recovered.

On September 27, the RM mobilized to the site to install new high-low switches in the effluent holding tank. After troubleshooting the system, it was determined that the landline was damaged and the phone jack needed repair. The lines were repaired, enabling the system to continue to be monitored through the off-site link. On September 28, the RM and Cleanup Technician performed quarterly maintenance on the system. A vacuum tanker pumped off the system vessels, and a high pressure steam cleaner was utilized. On October 18, the RM responded to the airport to check Recovery Well #1; the well pump was reset and put back on line. Bid specifications were submitted to drilling subcontractors for monitoring and recovery well installation. 2,750-gallons of oil was transported offsite for recycling. Through October 22, approximately 4,839,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 250-gallons of oil was also recovered.

On October 30, EQ and drilling contractor Fox Exploration mobilized onsite to install a 45' recovery well, utilizing a mud-rotary drilling method under the supervision of the REAC engineer. The well was installed within 10' of the

existing Recovery Well #1. Split spoon sampling occurred every 5', to a depth of 30', where continuous sampling occurred to 45'. Because of the mud-rotary method, no contaminated drill cuttings were generated. The well was developed after installation, and 600-700 gallons of development water was drummed for disposal. Fox Exploration demobilized after decon on November 2. All sand/silt was left in the drums for later disposal. On November 6, a Geoprobe was mobilized for installation of two (2) piezometers to the south of the new recovery well. On November 13, EQ remobilized to install the new recovery well into the existing system. The 25 gpm pump from the existing recovery well system was installed in the new well, and Recovery Well #1 was taken off line. The piping was excavated, and all wiring and product lines were replumbed to the new well. After installation, the new well was placed on line and run at different depths, with the pump being placed at a 7-10" depth below groundwater. Well installation was complete by November 17. 2,750 gallons of oil was transported for offsite recycling. Oil recovery system monitoring is ongoing (5,136,000-gallons pumped to date). Approximately 350 gallons of oil is presently stored for disposal.

An ERRS crew remobilized on November 28 to excavate two oil seep areas located in the ditch. Each seep area was contained by building earthen dams, 3" pumps were set up to pump runoff water past the excavation areas, and quicklime was dumped into those areas. An excavator mixed and excavated the soil for disposal. EQ began the pump drawdown tests by using Recovery Well #1. An oil/water interface probe was used to check the levels of oil and water in all of the piezometers and monitoring wells by START. The pump in Recovery Well #1 was then placed at 5' below groundwater, and run for a period of one week. Levels of oil and water were then recorded in designated piezometers and wells for one week by START. The pump was then lowered to

10' below groundwater, and run at those levels for additional readings. The EQ crew demobilized the site on December 7. The tests were interrupted when a hi-lo switch stopped working on December 19. A new switch was installed on December 21, and the drawdown test continued. 400 cubic yards of contaminated soil was transported for disposal at Republic Landfill. Approximately 5,578,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 76 gallons of oil were also recovered.

The drawdown tests were completed on December 27, and START compiled a chart showing the levels of oil/water recorded in the wells and piezometers during this period. The information was forwarded to the REAC/ERT group for incorporation into the modeling of the site, and a final report to EPA including recommendations for installation of a new recovery system. Upon completion of the tests, the remaining wells in the system were put back on line. Recovery Well #2's discharge line was frozen, requiring space heaters to be placed on the lines overnight. On December 29, the remaining well was put on line, and monitoring of the system continued. The sock filter for Recovery Well #1 and #2 was building large amounts of sand in the filter, and was changed from a 25-micron filter to a 50-micron filter. Over the following weeks, the pressure in Recovery Well #1 sock filter jumped from 60 psi overnight. On January 15, 2001, the RM and Cleanup Technician mobilized to the site for training on the system, and the pump in Recovery Well #1 was pulled and raised from 10' BGW to 5' BGW. The well was placed back on line, and the building of pressure in the sock filters subsided. Training of additional system technicians will continue through early February, enabling other personnel to respond to problems at the airport in the absence of the EQ RM. 400 cubic yards of contaminated soil was disposed at Republic Landfill during this period.

Approximately 6,010,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 55 gallons of oil were also recovered.

Weekly O&M was conducted on the system. On February 7, the RM and Cleanup Technician mobilized to the site to change out spent boom in the ditch. System training was conducted with the Technician, in anticipation of providing backup response in the event of system shutdown. On February 11, the RM responded to a system down call. The hi-lo switch in the effluent holding tank had gone down due to bio buildup on the switch. It was removed, cleaned, tested, and replaced into the tank. The system was put back on line. Approximately 6,400,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 70 gallons of oil were also recovered, and 12,550 gallons of oil have been recovered to date.

EQ continued to evaluate the problem of pumping fine sand in through the new Recovery Well #1. An oil only scavenger pump was procured. The Recovery Well #1 fluid recovery process will be changed; the present 4" stainless steel groundwater pump was retrofitted to accommodate an oil only pump, and a new recovery line was installed back to the recovery system. On March 20, the RM worked with PLC in troubleshooting the Site-Link system. It was verified that there was a bad phone jack and line inside the control panel that was inhibiting our capability of calling up the system from a remote location. Problems on the RM's computer with the Site-Link program were also corrected. On March 21, a detailed budgetary cost estimate was prepared and submitted to the EPA for a new recovery system. This estimate included 2-3 year system operation and system O&M. Approximately 6,953,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 100 gallons of oil were also recovered.

On April 7, the RM mobilized to the site to conduct weekly maintenance on the system. At the time the system was inoperable (the Hi-Lo switch in the effluent holding tank was down). After shutting off the system, the switch rod was removed from the tank, cleaned thoroughly, and put back into the tank. The system was put back on line, monitored, and tested. On April 13 weekly system maintenance was conducted. The pressure transmitter gauges that had been out for repair and calibration were put back on line in the system. PLC was contacted about incorporating the gauges back into the system. Approximately 7,217,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 75 gallons of oil were also recovered.

On April 25, the RM and Cleanup Technician mobilized to the site to change out old boom deployed in the ditch. The boom showed no sign of oil staining, and weekly maintenance on the system was also conducted. The Hi-Lo switches from Recovery Well #2, and the groundwater pump, were removed, cleaned, and put back into service. On April 30 and May 10, the Response Manager mobilized to the airport to conduct standard system maintenance. On May 16, the Site Link showed Recovery Well #1 down. It contained 30' of silt that had been pulled in through the screen during the recovery of groundwater. The recovery system was shut down, and the drilling contractor responsible for installation of the well was contacted to mobilize to the airport and re-develop and surge the well to remove the silt. Approximately 7,577,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 75 gallons of oil were also recovered.

On May 21, the RM mobilized to the site with Fox Drilling to surge and redevelop Recovery Well #1. Upon performing a sounding of the well, EQ found that the well contained 30' of silt. Fox Drilling used a surge block on the well, and the well was pumped free of the silt; this process generated 12 55-gallon

drums of water and silt for offsite disposal. No further surging was conduced on Recovery Well #1; the well will be sounded monthly during routine maintenance. On June 7, the RM and a Cleanup Technician mobilized to conduct quarterly system maintenance. A 5,000 gallon tanker was mobilized for T&D of the oil. The 2,000-gallon storage tank, oil/water separator, effluent holding tank, and bypass tank was pumped; all units were then steam cleaned to remove any buildup or sludge. Approximately 2,725-gallons of oil were transported for offsite recycling.

Groundwater recovery ceased on July 13, thereby allowing the recovery system to stabilize before the pump drawdown tests commenced on July 16. Levels of oil/water were taken using an oil/water interface probe of all wells and piezometers onsite. After they were recorded, the pump in Recovery Well #1 was lowered to 10 feet below groundwater and turned into a constant flow. The oil/water levels in the nearby wells and piezometers were constantly recorded. A 24-hour drawdown test was performed on July 19, but shut down after 16 hours due to problems with the pump. Enough data was recorded to complete the report needed to design the new system. Site demobilization occurred on July 20. Approximately 8,249,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 83 gallons of oil were also recovered.

On July 23, a Cleanup Technician met with DLZ Surveyors to survey the piezometers monitoring and recovery wells on both sides of the EJ&E Railroad line onsite. They were all surveyed in an established benchmark on the Conservation Chemical site, and all data was forwarded to CEC for incorporation into the results of the pump drawdown test conducted July 16 through July 20. The survey was completed on July 24. The system was temporarily shut down from August 13 to August 19 due to problems with the modem and panel.

Approximately 8,395,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 36 gallons of oil were also recovered.

On August 22, the RM and Cleanup Technician mobilized to troubleshoot the system. The Design Technician from PLC, responsible for creating the Site-Link system, also mobilized to the site. The software was removed and reinstalled, and a reconfiguration of the program was performed to incorporate the monitoring of the PSI in the sock filters, allowing EQ to monitor the sock filters. The system was put back on line after the panel was checked and reset. On September 20, a conference call between EQ, CEC, and REAC was conducted to discuss system drainage. The discussion incorporated the number and depth of wells, the location of the wells, and the initial components of the system. CEC received an authorization letter to proceed with the system design. REAC will be responsible for design of the recovery wells. Approximately 8,566,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 85 gallons of oil were also recovered.

The RM and Cleanup Technician remobilized to the site for weekly system maintenance and found that Recovery Well #1 was not running. The Hi-Lo switches were pulled, cleaned and reinstalled, then the 2" Grundfos groundwater pump was put through a series of tests. The pump was not working and was removed for repair. Recovery Well #1 was silted up, and was taken off line until a repair/retrofit solution could be agreed upon. CEC began design of the new recovery system, and the design was received from REAC for distribution as the RFQ for the well installation. Approximately 8,755,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 55 gallons of oil were also recovered.

The RM mobilized to the site on November 8, 2001 to collect an oil sample for an offsite bench test, to help determine the necessary screen size for the installation of the new recovery wells. From the test conducted by CEC, it was determined that a 10-slot screen was adequate for the new wells. Also, because of the use of 20-slot screen in the construction of the new Recovery Well #1, the well consistently silted up and required that a 6" sleeve be installed. On November 13, the RM and Cleanup Technician mobilized to the site to conduct routine maintenance on the recovery system. Recovery Well #3 was inoperable because the hi-sensor switch on Recovery Well #3 was not activating the pump. The switch was pulled, and a new hi-sensor switch was ordered. The pump and motor from Recovery Well #1 was removed, cleaned, tested, and sent out for repairs or replacement. On November 16, the RM mobilized to the site and replaced the hi-sensor switch on Recovery Well #3 and placed the well back on line. Approximately 9,079,600-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 99 gallons of oil were also recovered.

EPA and the RM mobilized to the site on November 29 to perform weekly system maintenance. Silt from 12 drums were removed and stockpiled with ditch sludge and piping for disposal. They then visited another recovery system presently operating in East Chicago to gather construction references for the new recovery system under design. A drilling contractor RFQ for the resleeving of Recovery Well #1 was released (a PVC liner will be installed and repacked with a filter pack to alleviate future well silting). EQ and the selected drilling contractor mobilized to the site on December 20, 2001 to begin work. 31' of silt was pumped from the well into 55-gallon drums. A 6" sleeve was installed, #7 filter pack sand was placed, and the well was surge blocked and developed by pumping three times it's volume. Approximately 9,371,600-gallons of

groundwater were recovered and pumped through the oil recovery system. Approximately 214 gallons of oil were also recovered.

The RM mobilized to the site on December 24, 31, and January 14, 2002 to conduct weekly system maintenance. On January 3, the RM and Cleanup Technician mobilized to the site to install the repaired Grundfos groundwater pump back on line in Recovery Well #1. The Hi-Lo switches were reinstalled, and the pump was tested and put on line. Frozen 55-gallon drums (generated from the redevelopment of Recovery Well #1) were placed into the recovery building to thaw out. The water and oil will be run through the system, and any silt will be removed from the drums and sent for offsite disposal. Drum thawing was complete by January 14, and the drum sludge was added to a stockpile of 100 tons of petroleum-contaminated soil and sludge. An Equipment Operator mobilized on January 15 to load out four loads of petroleum contaminated non-hazardous soil and sludge to Three Oaks Landfill for disposal, along with old oil boom and drum silt. On January 17, the RM removed the effluent transfer pump from the system for repair after noticing a small leak around the intake area. The pump will be repaired, tested, and put back on line in one week. Approximately 9,940,500-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 76 gallons of oil were also recovered.

On January 28, 2002 the groundwater effluent pump was reinstalled (new seals and bearings). A gate valve was also installed on the effluent line of Recovery Well #1. The line was replumbed and the valve was turned back (to ensure that the well runs on a constant mode rather than constant recycling). The RM mobilized to the site on February 8 and 14 to conduct regular equipment maintenance. Approximately 10,567,000-gallons of groundwater were recovered and pumped through the oil recovery system. Approximately 52 gallons of oil were also recovered.

EQ met with the EJ&E Railroad Chief Engineer on February 19 to procure access agreements, temporary permits, and insurance for the installation of recovery wells for the expansion of the recovery system. EQ also met with CEC and PLC to discuss utilization of the present equipment and panel at the airport, or the necessity of a completely new system panel. On March 1, EQ met surveyors from DLZ to incorporate data from previous surveys with new data points surveyed (pipe under railroad, wooden steps, individual rail lines, and the abandoned rail spur that EQ intends to install recovery wells on). A drawing showing these locations will be submitted to EJ&E for inclusion towards access agreements. The recovery system was shut down at that time to enable EQ to dig and locate the end of the 12" steel casing that is presently assumed to be under the railroad. On March 7 the west side of the bank was excavated. The end of the steel casing could not be located. On March 13, EQ met with EPA to discuss pipe installation under the railroad. An RFQ for steel casing installation was developed. Weekly site maintenance was conducted, and the system was put back on line.

The system was shut down for 2 weeks due to the amount of standing water in the vicinity of the present recharge trench. EQ conduced a site walk with contractors in regards to the installation of a 20" casing under the EJ&E rail line. EQ met with EJ&E Railroad, and with jacking/boring contractors, on March 28 to determine where the casing for the new recovery system should be installed. Bids were submitted by April 5. The successful bidder was required to develop a Work Plan and Health and Safety Plan, for casing installation by horizontal augering/drilling method. Because of the submittal of only one (1) bid for the jacking and boring of the casing, EQ conducted an additional site walk for casing installation on April 15. Bids will be submitted by April 22 for review. The system was put back on line on April 16. CEC submitted final drawings for EQ to

present to EJ&E Railroad showing the placement of the recovery wells, the 20" casing under the railroad, and the areas of the building expansion. Approximately 11,119,900-gallons of groundwater were recovered and pumped through the oil recovery system.

EQ met with access road property owners to acquire approval for installation of the casing that would carry discharge lines across their property. Access was denied and at that time, the EPA directed EQ to abandon the pursuit of the installation of the casing. The new recovery system will be installed entirely on the Conservation Chemical property, and will operate as an independent system. The old recovery system will continue to be operated on the grounds of the airport. A site walk was conducted on May 17 to meet with well drilling contractors. An RFQ was developed and presented, along with drawings for the installation of six (6) recovery wells on the Conservation Chemical property.

Recovery Well #4 went down (pump was sent down for repairs). EQ is creating CAD drawings showing the new system process equipment layout and electrical layout, and the process flow of the piping. The process equipment and building construction were bid out. EQ finalized a permit required by the FAA to install recovery wells at the approach to the west end of the Chicago-Gary Airport runway. Because the height of the mast will extend to 62' above the elevation of 600 feet, FAA required notification, permit, and flagging of the equipment. EQ may have to lower the mast if a jet approaches. EQ also finalized the access agreement with EJ&E Railroad for installation of six recovery wells along the rail line.

On July 11 the RM, EPA OSC, and Design Engineer met onsite to review new system drawings, finalize system component plans, and measure the area where the new recovery building will be placed. The exact recharge trench area

was determined, and EQ was directed to initiate vendor procurement. On July 18, the RM and Cleanup Technician mobilized to the site to conduct semi-annual system maintenance. The 2,000-gallon oil storage tank, oil/water separator, effluent tank, and oil bypass drum were pumped. Oil and sludge was also pumped from Recovery Well #4. All vessels were steam cleaned and pumped into the tanker, and the oil was sent to Beaver Oil for recycling. Permit applications were sent to the FAA and EJ&E Railroad for permits to install recovery wells along the railroad's property line. A permit must be issued because the mast height is in the direct flight runway approach at the airport. EJ&E Railroad must grant permission to permanently install the well on the abandoned spur and along the railroad embankment. The permits need to be finalized by mid September prior to mobilization for installment of the new recovery wells.

By mid-August, RFQ's were released to selected vendors for bid procurement of a new oil recovery system. A building, oil/water separator, and control panel vendor will be chosen upon submittal and review due to the significant lead-time required. Permit applications were completed and submitted to the FAA and EJ&E Railroad for installation of recovery wells along these properties. A 4-6 week review period was anticipated before permits were issued. The system was not in operation through September due to repairs on hi-lo switches for the effluent tank, and the groundwater pump from Recovery Well #4.

In September EQ finalized permit issues, and an FAA permit was issued for installation of Recovery Wells #1-3. Due to the height of the tower on the Barber Rig, there were limitations and notifications that needed to be in place prior to installation with the Chicago-Gary Airport Tower. EQ obtained an access agreement from the EJ&E Railroad for installation of the wells along the rail line

on their property, and worked on finalizing insurance issues with the Railroad to obtain a temporary permit for work on their property. Contracts were awarded to the subcontractors supplying the new recovery system components. The design of the building is in progress, and applications were submitted to the state and local agencies to obtain a construction permit. It is anticipated that building construction will begin in late October. The contractors supplying the system components (control panel and telemetry, oil water separator, groundwater pumps, and oil storage tanks) were notified of a mid-November delivery date.

The system was back on-line by September 26. The groundwater pump in Recovery Well #4 remained inoperative due to problems with the relay switch in the control panel. During this reporting period 23,900 gallons of groundwater were pumped, for a total of 11,824,100 gallons to date. 94.9 gallons of oil were also recovered to date and removed for recycling. Site remobilization occurred on October 14. An FAA permit was obtained on September 16 enabling EQ to allow the drilling contractor to raise the mast of the drill rig in the direct approach to the Chicago-Gary Airport. An access agreement and permit was issued to EQ to install the extraction wells and pipe trench on EJ&E property on October 8. The drilling contractor, Boart Longyear, mobilized on October 8 to begin installation of six (6) 10" extraction wells. The wells were installed to varying depths of 25' to 35' along the eastern edge of the property line. Well installation was complete by October 18. EQ began excavation of a pipeline trench from Extraction Well XW-1 on the south side of the site back to the area of the proposed recovery system building (approximately 700').

Upon completion of extraction well installation of the new system, EQ constructed the infiltration gallery and overspill. These new system components will receive the effluent discharge water from the system through a 3" SCH 80 pipe in the infiltration gallery; the discharge water will flow through a 4"

perforated SCH 40 drain line and back into the groundwater. The gallery was filled with 4-6" slag to accommodate the groundwater. An overspill trench was constructed to the south of the gallery to receive effluent if the system backs up. Beginning on October 28, EQ excavated the pipeline trench from Extraction Well #6 to the building. Upon completion of the trench, the appropriate piping was installed to carry the oil and the groundwater back to the system. Each extraction well received two (2) 1" SCH 80 PVC lines to carry the oil, and two (2) 1" SCH 80 lines to carry the groundwater. Approximately 3200' of pipe was plumbed from the wells back to the system. The water lines received a gradual increase, from 1" to 3" at the system. The pipeline was installed and pressure tested using compressed air at 10 PSI. Chester Construction mobilized onsite on November 13 to begin new system construction. The footings were excavated and poured upon inspection by the City of Gary. The footings were backfilled, and construction of the building walls and tank slab walls began. After inspection, Chester Construction poured the walls of the building and the inside and outside slabs.

Walker Concrete completed pouring the walls for the tank pad, and the forms were pulled on November 25. All concrete for the slabs and walls of the building and the tank pad were completed. Kerr Construction began the erection of the new recovery system building on December 2. The installation of the electrical wiring from the recovery building to the well heads began on December 4. The wiring was installed by EQ to the well vaults, and included wiring for the water and oil pumps, the hi-lo sensors, and the pressure transducers. Approximately 3200' of wire was pulled into the building to the control panel area, and was complete on December 10.

Kerr Construction also completed water treatment building construction on December 10. Circle R Electric began electrical wiring and HVAC installation

inside the building on December 11. EQ pressure tested all oil and water lines in the trench, and backfilled the trench to grade, completing activities by December 17. EQ then set the well vaults at the well heads. EQ began installation of building components. The 5,000-gallon oil storage tank was set on the outside pad. The control panel, oil-water separator, sock filters, the 1,000-gallon effluent storage tank, and the oil, water, and sludge pumps were placed inside the building.

On January 22, 2003, EQ met with security/burglar alarm companies for procurement of services for the system building. An RFQ was developed and released. On January 23, SBC Ameritech installed a phone line to the control panel for remote monitoring of the site. EQ continued to monitor the oil recovery system on the grounds of the Chicago-Gary Airport. Control panel electric wiring was installed by Continental Electric on January 30, including a change order for the electrical heat tracing of an outside oil line. EQ continued plumbing of the inside lines to the process equipment. During this reporting period 51,000 gallons of groundwater were pumped, for a total of 11,927,100 gallons to date. 171 gallons of oil are also stored on site awaiting recycling.

On January 31, EQ completed the plumbing of all influent and effluent lines inside and outside the building leading to the 5,000-gallon storage tank. The electrical contractor completed electrical installation to the system process equipment on January 31. An inspection by the City of Gary Building Department brought attention to additional work that needed to be completed on the outside line leading to the building. An additional 300-amp line was installed on February 12. NIPSCO connected the permanent power to the building on February 14. EQ installed individual control panels at the well vaults to control the skimmer pumps on February 6. The groundwater table depression pumps were installed by EQ in Extraction Wells XW-1 through XW-6 by February 11.

National Industrial Maintenance mobilized on February 10 to power wash the existing vault, and jet clean the laterals to the old infiltration gallery on the grounds of the Chicago-Gary Airport. The sludge was removed and mixed with petroleum contaminated soils profiled for offsite disposal. On February 18, a determination was made that the pumps for XW-1 and XW-2 would not perform adequately due to incorrect size screen mesh on the pumps. The pumps were switched to a 60-slot screen (versus a 100-slot screen). On February 21, pressure transducers were installed in XW-6, XW-5, and XW-4. EQ continued to monitor the system on the grounds of the Chicago-Gary Airport. The system pumped approximately 65,900 gallons, for a total of 11,993,000 gallons to date. 29 gallons of oil were pumped, for a total of 200 gallons presently stored onsite.

EQ completed the installation of pressure transducers to control groundwater pumps in Extraction Wells #3, 2, and 1 on March 3, 2003. Product Level Control mobilized on March 3 to begin the final wiring of these components to the control panel. Two (2) engineers wired all power leads from the control panel to the groundwater and oil skimmer pumps at all six well heads. PLC completed the wiring terminations in the control panel of the 10-K effluent pump, the oil-water separator pump, the product pump, and the OWS sludge pump. PLC also completed wiring terminations at individual components inside the recovery building that included: hi-lo sensors in the OWS separator, the 1,000-gallon holding tank, the 5,000-gallon oil storage tank, and the floor sump. Pressure transducers inside the building that read pressure in the Groundwater Effluent Gallery, and the 5-micron sock filters were wiped, along with the GPM flow meters controlling groundwater effluent and product storage in the outside storage tank. PLC installed the software that controls the system (Site-Link II) in the EPA/EQ laptop computers. The system was placed on line on March 6, and was tested for several days with PLC making necessary adjustments to the

program and their monitoring capabilities. Extraction Wells XW2 through XW6 were placed on line. EPA and EQ determined to run the well system with all wells totaling about 45 GPM flow rate, and let the system run for several weeks to determine drawdown levels and measurement of oil being drawn to the wells. J. P. Hyre Technologies mobilized on March 17 to begin installation of the remote site alarms/security system. The system building will be monitored 24 hours for intrusion, fire, system down, and high and low temperatures. The valve on the outside 5,000-gallon oil storage tank will be monitored for tampering, and the system will include remote wireless monitoring capabilities if a phone line is severed. The system will also feature the capability of remote surveillance cameras through the designated laptop computers. The Gary Airport Police and Fire will respond to any calls. 12,111,799 gallons of groundwater were pumped through the system to date, and 229 gallons of oil are presently stored on site.

EQ completed the installation of the site fence on March 28. A 300-foot long, 8-foot high chain link fence w/barbed wire was installed around the new extraction system building. Approximately 1000-feet of 6-foot chain link was installed around the perimeter of the site where EQ removed the fence to facilitate excavation. EQ mobilized an excavator to expand the present overspill gallery. A 16' SCH80 PVC pipe was installed from the present overspill gallery to a gravel depression on the northwest side of the site. This work increased the present capacity for effluent groundwater to double its present capacity. All onsite work was completed on April 5, and EQ demobilized security guards and office trailers. As of April 27, 2003, 984,702 gallons of groundwater were run through the system, and 410 gallons of oil were recovered. Extraction Wells #1, 3, 5, and 6 are actively producing oil through the depression of the groundwater and the utilization of oil skimmer pumps. Extraction Wells #2 and 4 were not yet producing oil.

The EQ RM remobilized to the site on April 28, 2003 to update the OSC on system operation, and to adjust the oil skimmer pumps. The OSC suggested placement of boom in the overspill gallery as backup in the event that sheen should occur on the water discharge side. On May 1, EQ met with PLC to finalize a contract with them for O&M Services at the site if EQ personnel are unavailable. Boom was placed in the overspill gallery, and EQ worked with PLC in troubleshooting the flowmeter for the effluent line leading to the overspill gallery. The flowmeter was fixed and the system continued to run. On May 2, EQ noticed the sump in the building was full, and a small hairline leak in the effluent side of the oil water separator was detected. On May 9, the RM and a Cleanup Technician remobilized to the site to drain down the separator as low as they could. They proceeded to clean the inside of the effluent tank to determine where the leak was. TIGG was contracted to weld the end of the tank on May 13, and was back on line that same day. No oil was detected in Extraction Well #4, and that well was taken off-line.

On May 27, EQ mobilized to the site and found that the oil water separator had another leak in the opposite side previously repaired on the oil water separator. PLC and the manufacturer were notified that a solution needed to be implemented immediately. A subcontractor mobilized to perform extensive welding and structural support to the effluent end of the separator, and the system was placed back on line on June 6. On June 16, EQ responded to the site after monitoring alarms alerted them. Due to heavy rains, the oil-skimmer pumps had cycled continuously until the 5,000-gallon storage tank was full of water. EQ drained the excess water on June 20, and the system was placed on line.

The system was put back on line after the water in the oil storage tank was drained on June 20. Product Level Control was instructed to program the

software to shut down the oil skimmer pump if it cycles for extended periods of time. On July 10, EQ's engineer sourced a pump, capable of input into the system, to be used for dewatering of the 5,000-gallon oil storage tank, if necessary. EQ continued to troubleshoot the old system at the Chicago-Gary Airport to determine why it was not functioning properly.

To date, approximately 2,500,000 gallons of groundwater were pumped through the new system. The 5,000-gallon oil storage tank had been full twice, but due to difficulties with the oil skimmer, an accurate measurement could not be rendered. EQ worked on a solution for bio-fouling of the system and monitoring components because of the high bacteria/iron count in the influent and effluent water. EQ physically measured the tank to determine the quantity of oil present. The system at the Chicago-Gary Airport had pumped approximately 12,800,000 gallons of groundwater to date, and contained 300 gallons of oil in the onsite storage tank.

On August 1, EQ coordinated with PLC to repair the hi-lo sensor in the small product tank. Problems with the 4" Grundfos pump in Recovery Well #4 were occurring. PLC advised EQ that the amp in the control panel for Recovery Well #4 could be increased from a 7 amp to a 10 amp fuse. EQ continued to monitor and conduct O&M on both the Chicago-Gary Airport system and the new Industrial Highway system. EQ procured bids from industrial maintenance contractors to clean and treat the 4" line in the infiltration gallery at the Industrial Highway system. A vac truck was used to suck the water and the bio-sludge from the gallery, before a jet truck blasted the lines and treated the gallery with a 5% mixture of sodium hypochlorite. This maintenance was ongoing due to the gallery bio-fouling. EQ addressed enlarging the infiltration gallery to the east to accommodate an additional four 4" slotted lines and additional rock in the gallery. EQ also conducted a cleaning of the 1,000-gallon tank and the oil water

separator. The RM met with a chemical engineer from Nalco to design a treatment method of the effluent water prior to discharge into the gallery. A metering pump and oxidizer were priced to determine if this would be economically feasible. If not, a different flowmeter will be incorporated into the system to accurately measure the offsite discharge.

The final day of work under this contract is September 23, 2003. Onsite work will be completed under Contract No. 68-S5-03-06. No problems were encountered during this ERRS response action.

APPENDIX A

DETAILED RESOURCE LISTS

APPENDIX B

WASTE TRANSPORTATION AND DISPOSAL INFORMATION

Oil Contaminated Soil

1. Superfund Site Name: Industrial Highway
   CERCLIS # Not Applicable State: Indiana

2. Type of Action
   - X Removal
     - X Fund Financed
     - __ PRP Financed
   - __ Remedial
     - __ Fund Financed
     - __ PRP Financed

3. Type and Form of waste; if more than one type, attach separate sheet for this and remaining questions for each type:

   Type:
   - __ Solvents
   - __ Dioxins/Furans
   - __ Cyanide
   - __ Heavy Metals (Specify)
     _____
   - __ Acids
   - __ PCBs
   - __ Halogenated Organics
   - __ Other RCRA-listed Hazardous Wastes (Specify)
     _____
   - X Non-hazardous or de-listed Wastes

   Form:
   - __ Wastewater
   - __ Liquid Waste
   - __ Organic Sludge (greater than 1% Total Solids)
   - __ Inorganic Sludge (less than 1% Total Organic Carbon)
   - __ Solid or Solidified Waste
   - X Contaminated Soil and Debris

4. Quantity of Waste: 3,431.3
   - __ Cubic Yards(CY)
   - __Gallons (Gal)
   - __ Drums
   - __ Lab Packs
   - X Tons/Lbs

5. Range, average, and/or representative concentration of the contaminants of concern
   Non-Hazardous

6. Pre-treatment of waste before transportation:
   - __ Precipitation
   - __ Solidification
   - __ Stabilization
   - __ Neutralization
   - __ Fixation
   - __ Other
   - X None

7. Receiving RCRA facility name/location/I.D. No./unit(s):
   Forest Lawn Landfill
   Three Oaks, Michigan
   Not Applicable

8. Receiving Region: V

9. Receiving Region Offsite Contact (RROC):
Name: Not Applicable Date: Not Applicable

10. Date of Shipment 11-19-99, 11-20-99, 11-22-99 11-23-99, 11-30-99, 12-1-99, 12-6-99 & 1-16-02
Date of Disposal: 11-19-99, 11-20-99, 11-22-99, 11-23-99, 11-30-99, 12-1-99, 12-6-99 & 1-16-02

11. Pre-treatment of waste at site before final treatment or disposal:
__ Precipitation
X Solidification
__ Stabilization
__ Neutralization
__ Fixation
__ Other
__ None

12. Final method of treatment or disposal/unit receiving:
__ Precipitation
__ Incineration
__ Land Treatment
__ Recovery/Re-Use
__ Neutralization
X Landfill
__ Injection
__ Other

13. If waste was landfilled:
- what disposal cell number or location? Cell 4A & 4B
- Type of liner in cell (e.g. PVC, Clay, hypalon) 5 foot of compacted clay and 80 mil HDPE

14. Cost of Activities:
- Cost based on treatment/disposal only: ____
- Cost for transportation: __

Oil & Water

1. Superfund Site Name: Industrial Highway
   CERCLIS # Not Applicable State: Indiana

2. Type of Action

X Removal	__ Remedial
X Fund Financed	__ Fund Financed
__ PRP Financed	__ PRP Financed

3. Type and Form of waste; if more than one type, attach separate sheet for this and remaining questions for each type:

Type:	Form:
__ Solvents	__ Wastewater
__ Dioxins/Furans	X Liquid Waste
__ Cyanide	__ Organic Sludge (greater than 1% Total Solids)
__ Heavy Metals (Specify) _____	__ Inorganic Sludge (less than 1% Total Organic Carbon)
__ Acids	__ Solid or Solidified Waste
__ PCBs	__ Contaminated Soil and Debris
__ Halogenated Organics	
__ Other RCRA-listed Hazardous Wastes (Specify) _____	
X Non-hazardous or de-listed Wastes	

4. Quantity of Waste:13,738

__ Cubic Yards(CY)	__ Lab Packs
X Gallons (Gal)	__ Tons/Lbs
__ Drums	

5. Range, average, and/or representative concentration of the contaminants of concern
   Non-Hazardous
   _____

6. Pre-treatment of waste before transportation:

__ Precipitation	__ Neutralization
__ Solidification	__ Fixation
__ Stabilization	__ Other
	X None

7. Receiving RCRA facility name/location/I.D. No./unit(s):
   Beaver Oil Co.
   Gary, Indiana
   Not Applicable

8. Receiving Region: V

9. Receiving Region Offsite Contact (RROC):
Name: Not Applicable
Date: Not Applicable

10. Date of Shipment 7-7-99, 9-30-99, 1-24-00 5-4-00,9-28-00 & 7-18-02
Date of Disposal: 7-8-99, 10-2-99, 1-25-00 5-5-00, 9-30-00 & 7-19-02

11. Pre-treatment of waste at site before final treatment or disposal:
__ Precipitation
__ Solidification
__ Stabilization
__ Neutralization
__ Fixation
__ Other
X None

12. Final method of treatment or disposal/unit receiving:
__ Precipitation
__ Incineration
__ Land Treatment
X Recovery/Re-Use
__ Neutralization
__ Landfill
__ Injection
__ Other

13. If waste was landfilled:
- what disposal cell number or location? Not Applicable
- Type of liner in cell (e.g. PVC, Clay, hypalon) Not Applicable

14. Cost of Activities:
- Cost based on treatment/disposal only: _____
- Cost for transportation: _ __

Oil Contaminated Boom

1. Superfund Site Name: Industrial Highway
   CERCLIS # Not Applicable State: Indiana

2. Type of Action
   - X Removal
     - X Fund Financed
     - __ PRP Financed
   - __ Remedial
     - __ Fund Financed
     - __ PRP Financed

3. Type and Form of waste; if more than one type, attach separate sheet for this and remaining questions for each type:

   Type:
   - __ Solvents
   - __ Dioxins/Furans
   - __ Cyanide
   - __ Heavy Metals (Specify) _____
   - __ Acids
   - __ PCBs
   - __ Halogenated Organics
   - __ Other RCRA-listed Hazardous Wastes (Specify) _____
   - X Non-hazardous or de-listed Wastes

   Form:
   - __ Wastewater
   - __ Liquid Waste
   - __ Organic Sludge (greater than 1% Total Solids)
   - __ Inorganic Sludge (less than 1% Total Organic Carbon)
   - X Solid or Solidified Waste
   - __ Contaminated Soil and Debris

4. Quantity of Waste: 80
   - X Cubic Yards(CY)
   - X Gallons (Gal)
   - __ Drums
   - __ Lab Packs
   - __ Tons/Lbs

5. Range, average, and/or representative concentration of the contaminants of concern
   Non-Hazardous

6. Pre-treatment of waste before transportation:
   - __ Precipitation
   - __ Solidification
   - __ Stabilization
   - __ Neutralization
   - __ Fixation
   - __ Other
   - X None

7. Receiving RCRA facility name/location/I.D. No./unit(s):
   Forest Lawn Landfill
   Three Oaks, Michigan
   Not Applicable

8. Receiving Region: V

9. Receiving Region Offsite Contact (RROC):
Name: Not Applicable Date: Not Applicable

10. Date of Shipment 5-13-99 & 9-23-99 Date of Disposal: 5-13-99 & 9-23-99

11. Pre-treatment of waste at site before final treatment or disposal:
__ Precipitation
__ Solidification
__ Stabilization
__ Neutralization
__ Fixation
__ Other
X None

12. Final method of treatment or disposal/unit receiving:
__ Precipitation
__ Incineration
__ Land Treatment
__ Recovery/Re-Use
__ Neutralization
X Landfill
__ Injection
__ Other

13. If waste was landfilled:
- what disposal cell number or location? Cell 4A
- Type of liner in cell (e.g. PVC, Clay, hypalon) 5 foot of compacted clay and 80 mil HDPE

14. Cost of Activities:
- Cost based on treatment/disposal only: _____
- Cost for transportation: _____